GLONASS AVL Tracking System
TR-600G

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CONTENT

1. Introduction

1.1 Introduction

TR-600G is a multi-functional and economical communication platform for mobile positioning applications. It integrates high sensitivity GPS/GLONASS/GALILEO module and Quad-band 850/900/1800/1900 GSM communication module with powerful microcontroller into a compact board. TR-600G enclosed into a solid housing for simple installation. It provides Real Time GPS/GLONASS/GALILEO positions anytime and anywhere in the open sky and offer the precise position and vehicle status to control computer to display the necessary information onto the maps. Benefits such as enhanced fleet management, improved vehicle safety, useful emergency response, and goods/items transformation are all accomplished through the implementation of TR-600G system.

1.2 Features
- Quad-band GSM/GPRS/EDGE 850/900/1800/1900 MHz system
- Built-in high sensitivity GPS/GLONASS system with active antenna.
- Supports AT command via SMS/ TCP/UDP
- Remote control via SMS/GPRS command
- Real-time GPS position feedback and vehicle status monitoring
- Built-in in digital outputs (3), digital inputs (3), an ACC input, 1 analog input, and 1 serial port
- Power supply for Li-ion battery and lead-acid battery
- Supports multi geo-fence function
- OTA (Over the air) firmware upgrade
- Data buffer storage 3,000 points
- Interval report depends on customization
- Power low/lost detection alarm
- Motion sensor
- 3 LED indicators for GSM, GPS, power status

1.3 Hardware Architecture

GPS antenna   GSM antenna

GPS Glonass

CPU

GSM MODEM

Speaker

Microphone

Emergency

USART/ RS-232

Motion Sensor

Li backup Battery

Digital input

Digital output

Analog Input
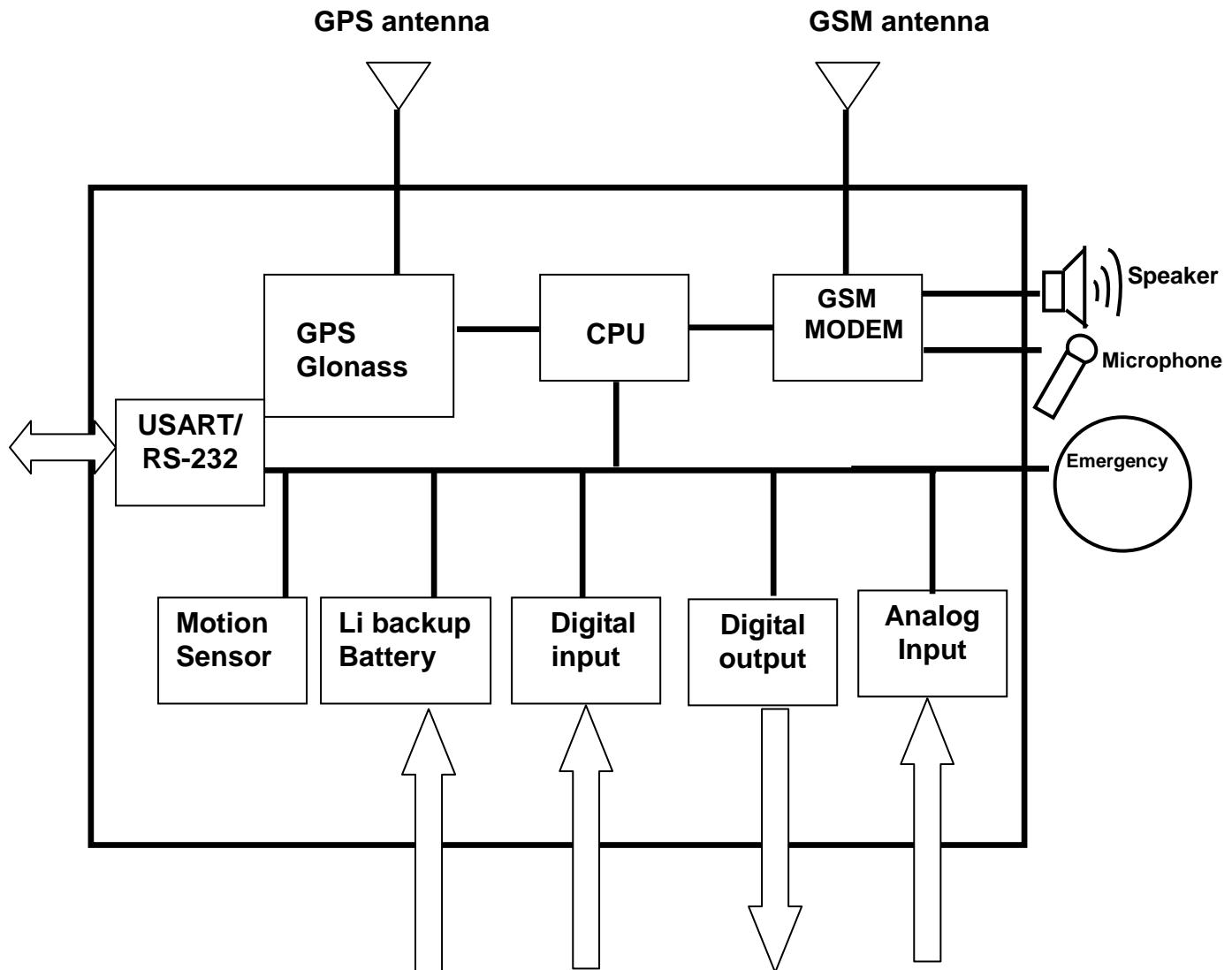
1.4 Hardware specification

Item	Description	
Dimension	98 mm X 71 mm X 22 mm	
CPU	High performance line ARM-base 32-bit MCU	
GPS receiver	High sensitive GPS/Glonass receiver	
Temperature	Operation	-30℃ ～ + 80℃
	Storage	-40℃ ～ + 85℃
GPS Antenna	SMA Type connector. Active antenna (3.3~3.8V)	
GSM Antenna	SMA Type connector.	
Communication	Quad-Band GSM/GPRS/EDGE 850/900/1800/1900 MHz	
Protocol	Voice/SMS/GPRS (TCP/UDP)	
Built-in Memory	32 Mb	
GPS logging capacity	3000 points (Cell ID 1,400 points)	
Emergency Input	Negative trigger	1
Ignition (ACC) Input	Positive trigger	1
Digital Input Port	Negative trigger	2
	Positive trigger	1
Digital Output Port	Negative trigger	3 (300 mA)
Analog Input Port	Analog Input	1(0~28V)
Serial Port	115200 bps	
Backup battery	Internal 820 mAh Lion battery	
	Support external Lead-acid battery (12V/24V)	
Sensor	Motion sensor	

1.5 Appearance
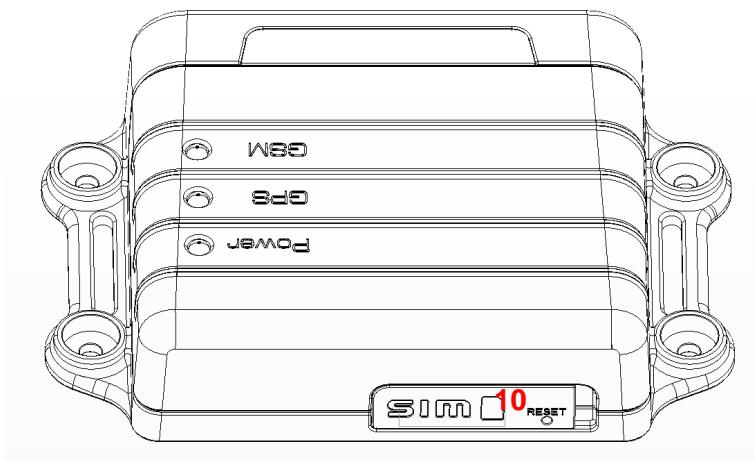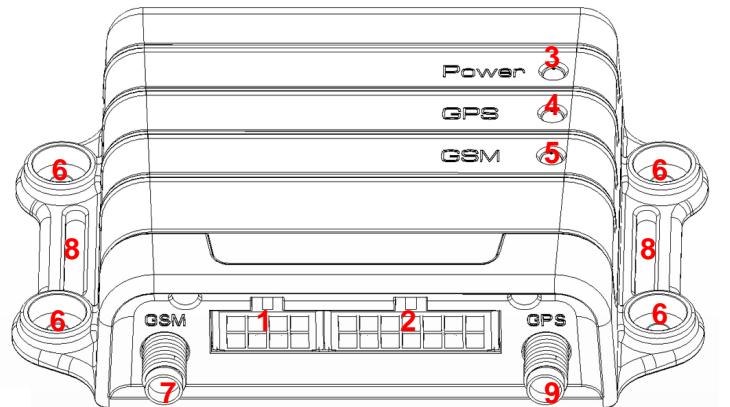
1	**Peripheral interface port**
2	**I/O port**
3	**Power Status LED**
4	**GPS LED**
5	**GSM LED**
6	**For fixing device with screws**
7	**GSM antenna connector**
8	**For fixing device with belt**
9	**GPS antenna connector**
10	**SIM card holder**

1.6 LED indicator

Power Status LED (Red)

LED	Permanently On
State	Main power on, device on

GPS LED (Yellow)

LED	Permanently off	Fast blinking (Once every 1 second)	Slow blinking (Once every 3 seconds)
State	GPS off	GPS not fix	GPS fix

GSM LED (Green)

| LED	Permanently off	Fast blinking (Once every 1 second)	Slow blinking (Once every 3 seconds)
State	GSM off	1. TR-600G is searching GSM network 2. SIM card is registering to GSM network	TR-600G is registered full service

1.7 Cable description

14 Pin I/O Cable
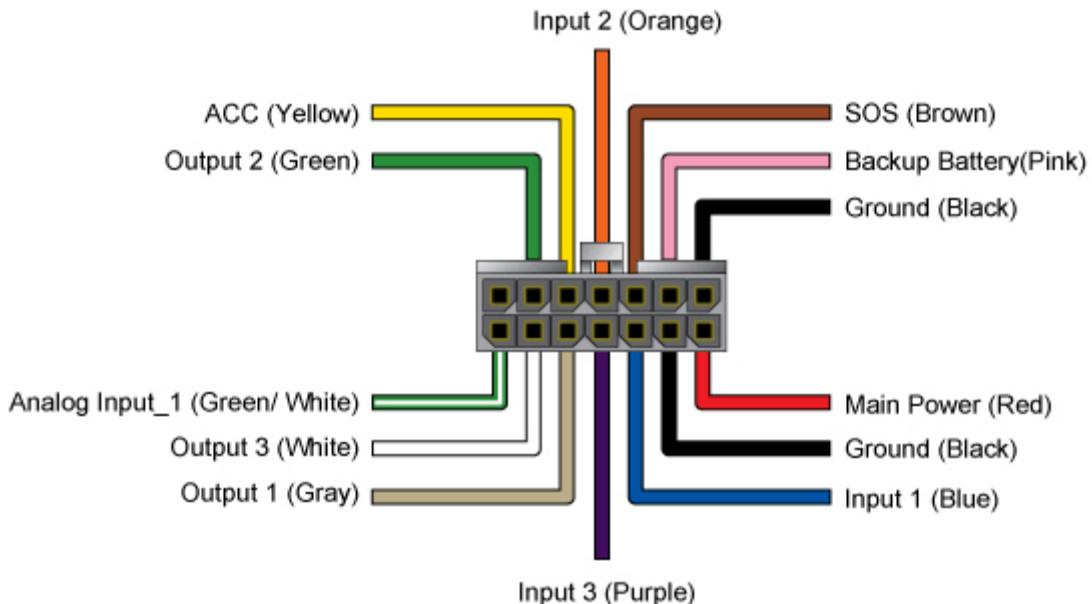
Wire Color	Description
Green/ White	**Analog Input_1**
White	**Digital Output 3** (Negative Trigger)
Gray	**Digital Output 1** (Negative Trigger)
Purple	**Digital Input 3** (Positive Trigger)
Blue	**Digital Input 1** (Negative Trigger)
Black	**Ground**
Red	**Main Power**
X	
Green	**Digital Output 2** (Negative Trigger)
Yellow	**ACC** (Positive Trigger)
Orange	**Digital Input 2** (Negative Trigger)
Brown	**Emergency** (Negative Trigger)
Pink	**12V/24V Backup Battery**
Black	**Ground**

8 Pin Cable
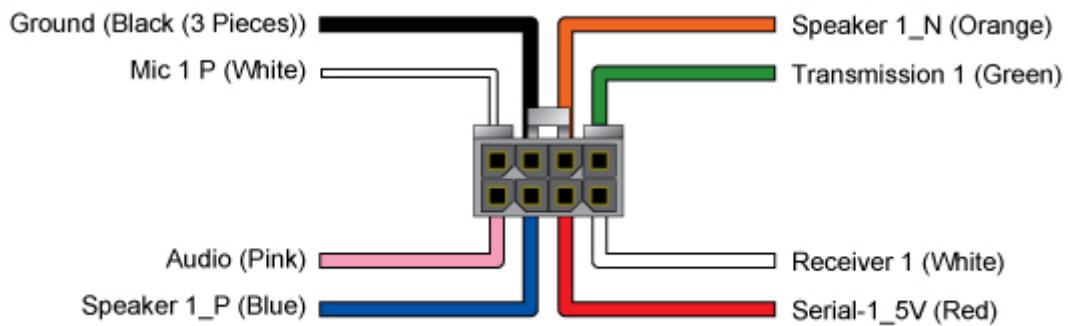
Wire Color	Description
Pink	Audio_5V
Blue	Speaker 1(Positive)
Red	Serial-1_5V
White	Receiver 1
White	Microphone 1 P
Black (3 Pieces)	Ground
Orange	Speaker 1(Negative)
Green	Transmission 1

1.8 Accessories
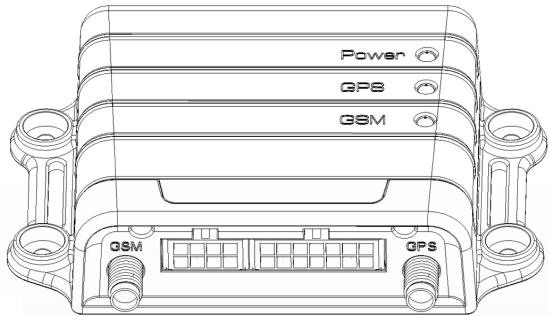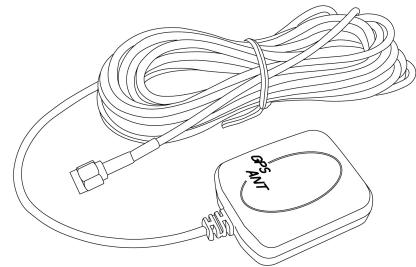
|	
Main Unit	**GPS Antenna**
GSM Antenna	**14 Pin I/O Cable**
8 Pin Cable	**RS-232 Cable (Option)**
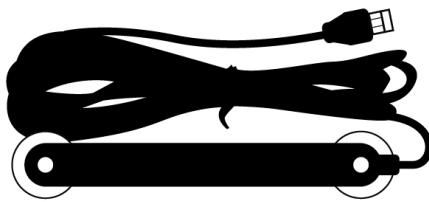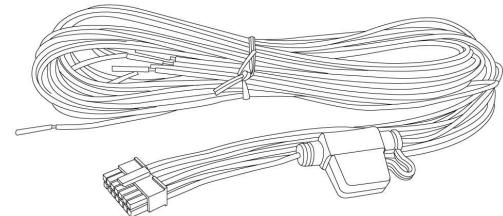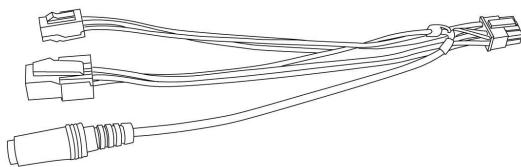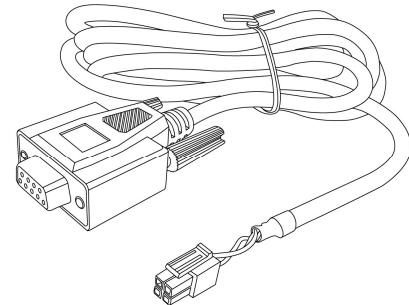
2 Operation

For first time users, please follow the steps below to complete the pre-installation.

2.1 Install the SIM card

With the cooper contacts face-up, align the notch on the SIM card with the notch on the SIM slot and insert the SIM card. If SIM is inserted correctly, you will not be able to see the copper contacts after inserting the card. To eject SIM card, simply, use your finger nail and apply slight pressure.

Note: Make sure to disable the SIM PIN entry function on the SIM card before inserting your SIM card

Note: Before installing or taking out the SIM card, please power off the TR-600G.

2.2 Install the GPS and GSM antenna

Install the GSM antenna to the GSM antenna port on the left side of the back of the device and install the GPS antenna to the GPS antenna port on the right side of the back of the device making sure both antennas tightly screwed in place. Please refer to the photo above.

2.3 Installing the Emergency button

There is a line of the 14 pin IO cable for connecting push button for emergency help.
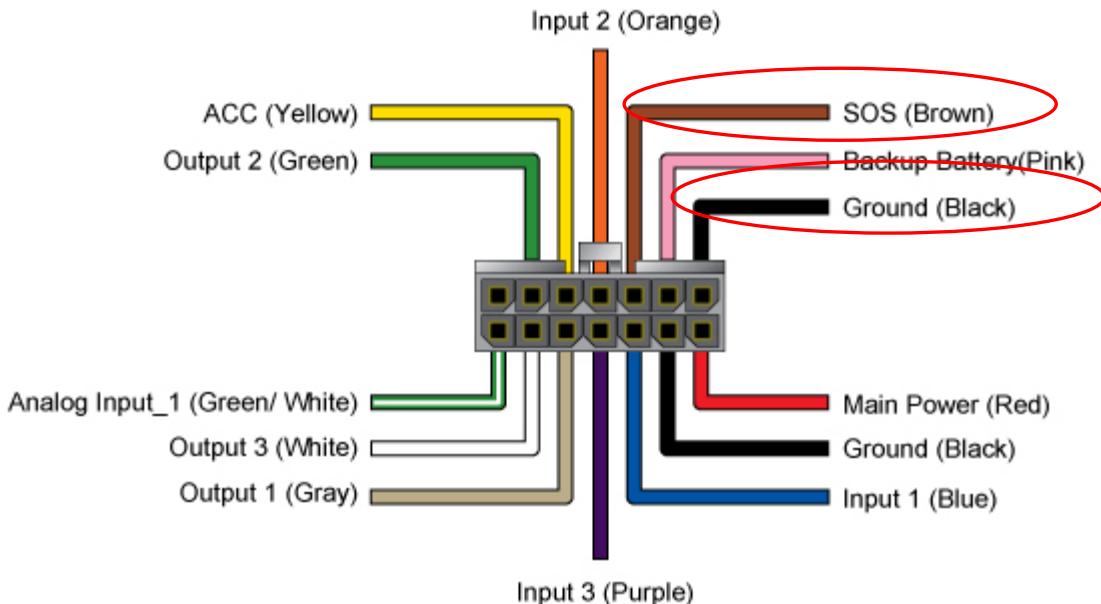
One end of the button must be connected to the emergency line and the other end must be connected to the ground line.